

FAN WITH MULTI-DIRECTIONAL WINDS

BACKGROUND OF THE INVENTION

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FIELD OF THE INVENTION

10 The present invention relates to a fan with multi-directional winds, more particularly, a fan providing multi-directional fixed wind sources by vertically stacking fan units.

DESCRIPTION OF THE RELATED ART

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A conventional stand fan generally comprises a motor, a plurality of blades mounted on the impeller of the motor, a fan guard for covering the blades, a base for supporting the motor, and a switch assembly for turning on, turning off or switching speeds of the motor. Such stand fan may be caused to oscillate under limited angles so as to provide broader operational range. Alternatively such fan may be switched to provide a fixed single directional wind source.

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Even though the conventional fan can be caused to oscillate, yet it fails to provide uninterrupted wind to any user located within the angles of oscillation, for the wind produced by such fan would be intermittent. Further, such stand fan may provide single-directional wind for uninterrupted supply of breeze to one user, yet it is unable to provide uninterrupted breeze to users located at different directions at the same time.

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Even though such drawback might be solved by disposing numerous stand fans for more wind sources, yet numerous stand fans require larger disposing space as well as storage space. Thus the drawback caused by the conventional stand fan still requires further improvements.

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As for box fans, the wind-channeling plates mounted on rotors in front of air outlets are unable to broaden angles of air movement, a drawback that is identical to that of stand fans.

SUMMARY OF THE INVENTION

5 The object of the present invention is to provide a fan with multi-directional winds that provides both multi-directional fixed wind sources and uninterrupted winds therefrom for users located in different directions.

10 A fan capable of providing the foregoing features consists of two fan units vertically stacked and a shaft mounted between the two fan units. The two fan units are integrally incorporated via the shaft, and different directions of wind are provided through adjustment with the shaft as the pivot.

15 The fan unit includes a box body, a motor, a plurality of blades fixatedly mounted on the impeller of the motor.

The motor and the blades are placed inside the box body.

20 The box body includes a top wall, a bottom wall, a right wall and a left wall with the front side and the rear side thereof being open.

Fan guards are further disposed respectively on the front and rear sides of the box body.

25 A base is further disposed underneath the fan unit stacked at the bottom.

30 A shaft, disposed between the fan unit stacked at the bottom and the base, is for incorporating the fan unit and the base such that the fan unit and the base are integral.

The shaft is further disposed with through holes for the power wires of fan units to go through.

35 A switch assembly is further disposed on the base for controlling motors of fan units to turn on, turn off or switch speeds.

BRIEF DESCRIPTION OF THE DRAWINGS

5 These and other features, aspects and advantages of the present invention will become better understood with regard to the following description, appended claims and accompanying drawings that are provided only for further elaboration without limiting or restricting the present invention, where:

10 FIG. 1 shows a three-dimensional view of a fan with multi-directional winds of the present invention;

FIG. 2 shows a sectional view of the X-X line in FIG. 1;

15 FIG. 3 shows a three-dimensional view of a fan with multi-directional winds of the present invention providing multi-directional wind sources; and

FIG. 4 shows a sectional view of another embodiment for the shaft with the fan in FIG. 1 as the structure.

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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

25 The following is a detailed description of the best presently known modes of carrying out the inventions. This description is not to be taken in a limiting sense, but is made merely for the purpose of illustrating the general principles of the inventions.

Please refer to FIG. 1 and FIG. 2. A fan with multi-directional winds of the
30 present invention comprises a first fan unit 1A, a second fan unit 1B, a third fan unit 1C, a base 40 and a switch assembly 50, wherein the first fan unit 1A, the second fan unit 1B and the third fan unit 1C all respectively comprise a box body 10 having a right wall 13, a bottom wall 14, a left wall 15, a top wall 16, a front side 17 and a rear side 18. Both the front side 17 and the rear side

18 of the box body 10 are open with a fan guard 19 disposed respectively thereon. The first fan unit 1A, the second fan unit 1B and the third fan unit 1C are also respectively disposed with a motor 11 and a plurality of blades 12 driven by the motor 11 in the box body 10. The first fan unit 1A, the second fan unit 1B and the third fan unit 1C are stacked vertically and integrally formed via shafts 60, having through holes 61, disposed therebetween. A base 40 is disposed underneath the bottommost fan unit 1A, and the fan unit 1A and the base 40 are integrally formed via a shaft 60 having through holes 61. A switch assembly 50 is disposed on one side of the base 40.

Each motor 11 can be turned on, turned off and switched to different speeds via the control of the switch assembly 50. As the motor 11 is actuated, blades 12 are brought to rotate so as to produce air movement. The through holes 61 disposed in shafts 60 are wire conduits for power wires (not shown in drawings) of each fan unit. The base 40 is for increasing the height of the bottommost fan unit 1A so as to prevent wind blowing off the fan unit 1A from being directed to the ground only.

As shown in FIG. 3, the first fan unit 1A, the second fan unit 1B and the third fan unit 1C can be adjusted by manually rotating each box body 10, which refers that the user may adjust the direction of air movement from the front side of each fan unit by using shafts 60 as pivots.

FIG. 4 shows another embodiment wherein elongated shafts increase distances between each fan unit so as to effectively enlarge the operation range of the fan.

The plurality of fan unit of the present invention is vertically stacked so as to significantly decrease the disposing area. Also the wind direction off each fan unit can be adjusted with shafts being pivots, such that fixed wind sources with different directions and uninterrupted air movement for users at different directions are both provided.

Although the present invention has been described in considerable detail with

reference to certain preferred embodiments thereof, those skilled in the art can easily understand that all kinds of alterations and changes can be made within the spirit and scope of the appended claims. For example, a base can be integrally formed or directly fixed with the bottommost fan unit without
5 having a shaft disposed therebetween, such that the bottommost fan unit provides is fixed in one direction with no need to be rotated. Alternatively no base is disposed underneath the bottommost fan unit. Alternatively motors are not necessarily covered entirely by fan units. Alternatively handles can be mounted on the outer surfaces of both the right and left walls of the fan units
10 so as to provide convenient operation of rotating fan units with shafts as pivots by the user. The number of fan units being stacked is not limited as long as no stability of the overall height and safety concerns are present. Alternatively the switch assembly can be disposed on the top wall of the topmost fan unit. Therefore, the spirit and scope of the appended claims
15 should not be limited to the description of the preferred embodiments contained herein.

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